



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/785,992	02/26/2004	Juichi Arai	1021.43560X00	2658	
20457	7590	03/20/2006	EXAMINER		
ANTONELLI, TERRY, STOUT & KRAUS, LLP				PARSONS, THOMAS H	
1300 NORTH SEVENTEENTH STREET				ART UNIT	
SUITE 1800				PAPER NUMBER	
ARLINGTON, VA 22209-3873				1745	

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/785,992	ARAI ET AL.	
<b>Examiner</b>	<b>Art Unit</b>		
	Thomas H. Parsons	1745	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### **Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 26 February 2004.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-11 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 26 February 2005 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)  All   b)  Some \* c)  None of:

1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. Figure 1 is objected to as failing to comply with 37 CFR 1.84(p)(5) because it does not include the following reference sign(s) mentioned in the description:

Reference signs 17 and 18, as mentioned on page 8, lines 14-15.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-8 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Tomiyama et al. (5,665,491).

**Claim 1:** Tomiyama et al. in Figure 1 disclose an electrochemical energy storage device, comprising:

a positive electrode provided with a positive electrode collector and positive electrode active material (1) which is held by the positive electrode collector and can occlude/emit (i.e. intercalate/deintercalate) a metal ion (col. 4: 42-col. 5: 30 and col. 5: 65-col. 6: 22);

a negative electrode provided with a negative electrode collector and negative electrode active material (2) which is held by the negative electrode collector and which can occlude/emit the metal ion (col. 4: 42-col. 5: 30 and col. 5: 65-col. 6: 22);

a minutely porous separator (3) held between the positive electrode and the negative electrode (col. 12: 59-col. 13: 5); and

an organic electrolyte (col. 11: 32-col. 12: 47), wherein:

a range of operating voltage is equivalent to a range from below 2 V to 4 V or more (col. 16: 64-66).

**Claim 2:** Tomiyama et al. disclose operating voltage ranging from 0 V to 4.2 V (col. 16: 64-66).

**Claim 3:** Tomiyama et al. disclose a positive electrode collector and a negative electrode collector made of material including carbonaceous material (col. 13: 6-25).

**Claim 4:** Tomiyama et al. in Figure 1 disclose an electrochemical energy storage device, comprising:

a positive electrode provided with a positive electrode collector made of carbonaceous material and positive electrode active material which is held by the positive electrode collector and can occlude/emit a metal ion (col. 4: 42-col. 5: 30 and col. 5: 65-col. 6: 22);

a negative electrode provided with a negative electrode collector made of carbonaceous material and negative electrode active material which is held by the negative electrode collector and can occlude/emit a metal ion (col. 4: 42-col. 5: 30 and col. 5: 65-col. 6: 22);

a minutely porous separator (3) held between the positive electrode and the negative electrode (col. 12: 59-col. 13: 5); and

an organic electrolyte (col. 11: 32-col. 12: 47).

**Claim 5:** Tomiyama et al. disclose that the positive electrode collector and the negative electrode collector are made of a carbon fiber (col. 13: 6-25 which discloses carbon in the form of a fibrous body).

**Claim 6:** Tomiyama et al. disclose that the carbon fiber is woven cloth (col. 13: 6-25 which discloses carbon in the form of a fibrous body).

**Claim 7:** Tomiyama et al. disclose that the positive electrode active material and the negative electrode active material are applied to the carbon fiber col. 13: 29-31).

**Claim 8:** Tomiyama et al. disclose that both of the positive electrode collector and the positive electrode active material and both of the negative electrode collector and the negative electrode active material are held on metallic foil (col. 13: 6-31 wherein Tomiyama et al. disclose that the current collector can be a metallic foil coated with carbon and the active material mixture).

**Claim 11:** Tomiyama et al. disclose that a lithium salt is dissolved in the organic electrolyte (col. 11: 32-col. 12: 47).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomiyama et al. are as applied to claim 4 above, and further in view of JP9-259891.

Tomiyama et al. are as applied, argued, and disclosed above, and incorporated herein.

**Claims 9 and 10:** Tomiyama et al. do not disclose that the either or both of the positive electrode collector or/and the positive electrode active material and either or both of the negative electrode collector or/and the negative electrode active material are held on a plastic sheet or a metallized plastic sheet.

JP9-259891 discloses in Figures 1 and 2 that both of the positive electrode collector and the positive electrode active material and both of the negative electrode collector and the negative electrode active material are held on a plastic sheet or a metallized plastic sheet (abstract and paragraphs [0007]-[0016]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus of Tomiyama et al. by incorporating the plastic sheet of JP9-259891 because JP9-259891 discloses a plastic sheet for holding both of the

Art Unit: 1745

positive electrode collector and the positive electrode active material and both of the negative electrode collector and the negative electrode active material that would have improved the safety and reliability by preventing a temperature rise with the rapid cell temperature by an internal short circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas H. Parsons whose telephone number is (571) 272-1290. The examiner can normally be reached on M-F (7:00-4:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
PATRICK JOSEPH RYAN  
SUPERVISORY PATENT EXAMINER

Thomas H Parsons  
Examiner  
Art Unit 1745

\*\*\*